

We claim:

1. A process for managing power demand of one or more appliances, the process comprising the steps of: assessing for each appliance an energy consumption profile of the one or more appliances corresponding to its setting, summing the energy consumption profiles to determine if their sum leads to one or more peaks in power demand, and providing
5 one or more new energy consumption profiles to the one or more appliances for leveling the total power absorbed by appliances.
2. The process according to claim 1, wherein the appliances are controlled through on-off switching and wherein the appliances are synchronized for organizing the on-off switching of single appliances or components in order to limit peaks of power demand.
3. The process according to claim 2, wherein each on-off switching is based on a duty cycle and wherein a synchronizer puts in a sequence all the different duty cycles starting from the one related to the load with higher power level, then organizes them inside a selected period of control, each duty cycle being placed in a precise position inside the period of
5 control avoiding unnecessary simultaneous activation of loads.
4. The process according to claim 1, wherein at least one of the new energy consumption profile is based on a delayed switching on of appliances or components thereof.
5. The process according to claim 4, wherein on the basis of the new leveled energy consumption profiles, a signal related to future energy consumption profiles is

provided, such signal being adapted to be used by a control unit which supervises more appliances and/or utility in order to have a forecast for future total energy consumption on the mains.

6. A system for managing and curtailing power demand of appliances, each appliance having an user interface connected to a control unit for setting working parameters of the appliance, wherein the control unit is adapted to assess, for each appliance an energy consumption profile corresponding to its setting, the control unit being adapted to sum the
5 energy consumption profiles in order to check if their sum leads to one or more peaks in the power demand and to provide one or more new energy consumption profiles in order to level or reduce the total power absorbed by appliances or components thereof.

7. The system according to claim 6, wherein the appliances controlled through on-off switching further comprises a control circuit adapted to synchronize the appliances for organizing the on-off switching of single appliances in order to limit peaks of energy demand.

8. The system according to claim 7, wherein each on-off switching is based on a duty cycle and wherein a synchronizer is adapted to put in a sequence all the different duty cycles starting from the one related to the load with higher power level, and it is adapted to organize them inside the selected period of control, each duty cycle being placed in a precise
5 position inside the period of control avoiding unnecessary simultaneous activation of loads.

9. The system according to claim 6, wherein the control unit is adapted to provide one or more new energy consumption profiles based on a delayed switching on of appliances or components thereof.

10. The system according to claim 9, wherein the control unit is adapted to provide, on the basis of the new leveled energy consumption profiles, a signal related to future energy consumption profiles, such signal being adapted to be used by a control unit supervising more appliances and/or utility company in order to have a forecast for future total
5 energy consumption on the mains.